
Electrophoretic Behavior of Imogolite Under Alkaline Conditions

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Abstract: Electrophoretic mobility of imogolite has been reported as positive (migration toward the negative electrode) below pH 9, and zero above pH 9. However, when mobility of dilute imogolite suspensions (5×10^{-3} a kg/m³) was measured, it was found to be negative above pH 9. The reason that imogolite does not behave as a negative colloid when the clay concentration is not very dilute is because the imogolite forms floccules large enough to prevent migration. Imogolite has a PZNC at about pH 6, and has a PZC at pH 8.5– 9.0 showing a relatively low absolute mobility under alkaline conditions compared to that under acid conditions. The fact that imogolite behaves like this is understandable given the location of negative charge appearing on the inside surface of the thin fibrous tube, according to the structural model of imogolite.

Key Words: Electrophoresis • Imogolite • Mobility • PZC • PZNC • Viscosity

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